DATA EXTRACTION SYSTEM FOR PACKET ANALYSIS

ABSTRACT OF THE INVENTION

A method and apparatus for extracting information from an item of data is disclosed. In one embodiment, the invention operates within a packet processing device such as a router. Upon receipt of a data item the data item is analyzed to obtain information regarding the protocol under which the data item was constructed. Different protocol locate relevant processing and routing information at different offsets in a data item's header. As a result of the analysis, the system obtains a protocol key used to identify or obtain offset parameters. In one embodiment the results of the analysis are masked and the protocol key provided to a content addressable memory to identify the offset parameters. Using the offset parameters identified by the protocol key, the system selectively copies portions of the data item to generate a search key. The search key contains information pertinent to processing. The search key is provided to a table device or look-up device to obtain processing information for the data item being processed. In one embodiment the table device comprises a content addressable memory. In one embodiment the invention provides a high speed packet analysis system configured to generate a search key for use in a route table. Use of high speed table devices achieves high speed operation with configurability and flexibility by user input and modification to the look-up devices.